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Pagoda Roof on a Chinese Style Mosque

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ABSTRACT

Pagoda roofs as a characteristic of Chinese-style mosques have a multilevel design and can affect the interior aspects. The impact of the pagoda roof on the interior is still quite limited. This research aims to examine the shape of the pagoda roof at Cheng Ho Mosque Surabaya on the function of interior natural lighting, and find the meaning of the roof shape. The method used is architectural morphology analysis based on Nicola Marzot's theory, direct observation data collection and documentation. The results showed that the Cheng Ho Mosque pagoda roof functions as an efficient natural lighting element, has an octagon pattern with stained glass openings, and is a symbol of acculturation of Islamic-Chinese culture and spirituality. This research is expected to contribute theoretically, enriching the understanding of traditional architectural functions that are not only symbolic, but also functional and ecological in the context of cultural acculturation and space efficiency.

Keywords: Roof; Mosque; Pagoda; Lighting; Chinesse

INTRODUCTION

In human life, where there are many certain teachings adopted by the community, of course the existence of a place of worship is one of the important things. It is the same with the existence of a mosque. The mosque is a symbol of the presence of God, Y.M.E in the midst of the lives of His people and is the center of life for people who adhere to Islam. The mosque is one of the buildings that can reflect the combination of spiritual values with cultural elements. This place of worship is also often referred to as the house of Allah, S.W.T. The most sacred and noble place (Islami, 2023). In the lives of Muslims, the mosque plays a very important role with its main function as a place to worship Allah (Radwan, 2021). However, the mosque also functions as a symbol of cultural identity, a place of social and educational activities (Adjie & Joedawinata, 2023). So that the mosque becomes very meaningful for the individual and communal lives of Muslims (Ahmad, et al., 2024). The

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mosque is like the heart of Muslims (Hareri & Alama, 2020). The mosque is also a means for Muslim communities to express Muslim culture, which in the process involves architecture or certain other aesthetics (Cetinkaya, 2024). This cultural expression can be seen from the very diverse forms of mosque buildings and can be influenced by cultural exchange and fusion (Lopes, 2022). In Indonesia, this cultural diversity can be seen through the facade of the mosque, especially on the roof, which is the most prominent architectural element of various places of worship.

Figure 1 Three Parts Building
Source: Author Documentation, 2024

The roof as the head of a building (see Figure 1) is the most important building component that must exist as a complement to the building in order to function fully (Husin & Anisa, 2021). In addition, the roof of the mosque also functions as a symbolic element that reflects splendor and spirituality. In line with cultural diversity, mosque roofs also vary in shape. Basically, there are no specific rules governing how mosques should be built in Islamic teachings (Nirmala, et al., 2019). However, mosques are generally roofed with domes or semi-circular constructions that cover the central area of the building (Rochym, 1995). The dome has become an element that is considered important in Islamic architecture; hence it is found in many mosques (Azzahrah, et al., 2023). Although there are also some mosques that do not use domes as a cover for their buildings. This is due to the increasingly modern era and the many influences of other cultures. One example is the influence of Chinese culture.

The Chinese culture that has contributed to various developments in Indonesia is one of the cultures that influenced the shape of the mosque so that at first glance it looks like a temple with a pagoda roof (Sadono & Purnomo, 2020). The characteristics of pagoda roofs include having several levels in odd numbers such as 3, 5, 7, and 9 (generally 7 and 9) with angles that curve upwards (Aini, et al., 2022). The pagoda roof with its steps not only gives a visual identity to the exterior of the mosque, but also affects its interior aspects, one of which is the lighting system. Lighting certainly plays an important role in improving the function of

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space and is an aspect that needs to be considered when planning (Wisnu and Indarwanto, 2017). Both natural lighting and artificial lighting have their own advantages and disadvantages (Wiyanto, 2021). However, natural lighting from the sun has many benefits (Wirz-Justice, et al., 2021). The location of openings will greatly affect the quality of daylighting by how much light enters during the day and how light is distributed in the room. The pagoda roof shape is one way to add openings at the top of a building, so that the distribution of light in the room can be optimized.

In Chinese-style mosques, this type of roof can be easily found. One of them is the Cheng Ho Mosque which is currently spread across various regions in Indonesia, including Surabaya. The architecture of this mosque combines elements of Chinese culture with Islamic values (Aini, et al., 2022). Not only aesthetic, but the pagoda roof of this mosque also provides functional benefits. Natural light that enters optimally can make the room bright during the day without the help of artificial lighting and can save energy.

There are many studies on Cheng Ho Mosque, but those that focus on the impact of cultural acculturation such as the pagoda roof on its interior are still quite limited. Previous studies have mostly discussed its aesthetic and symbolic value as a cultural element. Although the Cheng Ho Mosque has been widely researched from aesthetic and symbolic aspects, studies that specifically highlight the impact of the pagoda roof shape on the quality of interior daylighting are still very limited. In fact, this understanding is important to reveal how traditional architectural elements such as pagoda roofs not only have cultural values but also practical functions in energy efficiency and comfort of worship spaces. Based on the urgency of the problem, the purpose of the research is to examine the pagoda roof shape at Cheng Ho Mosque Surabaya on the function of interior natural lighting, and find the meaning of the roof shape. This research is useful theoretically and practically. Theoretically, this research enriches the understanding of how architectural form (pagoda roof) not only has symbolic value, but also a real function in shaping the quality of interior space, strengthens the theory that traditional architectural elements have ecological and functional functions, not just cultural ornaments, this research becomes additional literature for the field of architecture that examines cultural acculturation and design functionality in a tropical context, especially in Indonesia, and encourages further research that combines traditional architecture, energy efficiency, and user experience space.

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METHOD

The method used in this research is Architectural Morphology based on the theory of Nicola Marzot (2005). Marzot's Architectural Morphology method covers the process of typology, tracing how an architectural type (for example: roof form) develops and changes in a local context, the relationship of form and use, analyzing how architectural forms support or are shaped by social functions, and contextual morphology, each architectural form does not stand alone, but is always related to history, local culture, and the environment (Marzot, 2005). The application of Marzot's Architectural Morphology method in this study, will be analyzed based on the shape or structure of the roof of the mosque, the function of the roof in the distribution of natural light in the interior of the mosque and the content of its spiritual visual meaning from the integration of Chinese and Islamic culture. Marzot emphasizes that form cannot be separated from the context of its use, so morphological studies must consider the transformation of form that occurs along with changes in function and culture. Architectural Morphology Analysis on the aspects contained in the roof of Cheng Ho Mosque Surabaya and its impact on the interior, especially indoor lighting is the right approach to study pagoda roofs in Chinese-modeled mosques because it can reveal the relationship between form, with the distribution of light in the space and also find its meaning.

RESULTS AND DISCUSSION

Cheng Ho Mosque as a Chinese-style Mosque

The Chinese-modeled Cheng Ho Mosque is a clear example of cultural acculturation in a building. The Cheng Ho or Muhammad Cheng Ho Mosque was established as a form of respect to Admiral Cheng Ho or Zheng He for his contribution to the propagation of Islam (Tempo Data & Analysis Center, 2020). In Indonesia, Cheng Ho mosques were built in several cities including Palembang, Pasuruan, Surabaya, Purbalingga, Gowa, Makassar and others. All Cheng Ho mosques combine elements of Chinese culture and Islamic values. Its distinctive features are the dominance of red, green and gold colors as well as Chinese ornaments and decorations and Arabic calligraphy (Tempo Data & Analysis Center, 2020). All of these elements can be found at the head, body and foot of the building both from the exterior and interior.

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Figure 2 Surabaya Cheng Ho Mosque
Source: https://lpminstitut.com/2019/03/19/masjid-cheng-ho-wujud-toleransi-beragama/
Accessed on November 21, 2024

The roof, which is part of the exterior architectural elements, is the first part of the building seen by the general public (Malik, et al., 2024). People can receive an idea of what culture is inside a building by looking at its exterior, including the roof. Therefore, in this mosque, the building is made similar to a temple, so that anyone who sees it will immediately remember Chinese culture. The pagoda roof is also a differentiator from mosques that are commonly spread in Indonesia (Hendri, 2022). One of them is implemented in the Cheng Ho Mosque Surabaya, which is located on Jalan Gading, Ketabang, Genteng District, Surabaya. The mosque is built on a land with an area of 21 x 11 square meters. The main building has an area of 11 x 9 square meters with an octagon shape on the pagoda located right in the middle of the building (see Figure 2). Each number has its own philosophical meaning.

Lighting

Lighting is an important aspect when constructing a building because it will greatly affect the visual comfort of its users. Visual comfort arises when lighting is sufficient to support all activities carried out in the room (Kusumawardani, et al., 2022). Interior lighting, especially in religious buildings such as mosques, is considered very important for spiritual and symbolic reasons (Arel & Oner, 2017). In general, lighting is divided into two categories, natural lighting from sunlight and artificial lighting from lamps. Natural lighting can be optimized through designs that have many light openings from the side walls or from the ceiling such as through windows, vents or skylights (Al-Raddadi, 1999). Meanwhile, artificial lighting can be used only when needed. Lighting from the roof or skylight is

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currently quite widely implemented in various buildings, including mosques. However, the shape of the roof and ceiling in the mosque is very diverse. These differences make the characteristics of each building different (Aisyah, et al. 2020). Specific lighting planning in places of worship needs to consider the functional, aesthetic and spiritual needs of worshipers. To fulfill the functional needs of a room, lighting should be designed in such a way that it is spread evenly throughout the room.

An even distribution of light is very important to create visual comfort in a room, especially in the inner area of a mosque. Uneven lighting will create contrasting dark and bright areas and can cause eye fatigue and disturb the comfort of its users. The effort to spread light evenly can be done through ceiling lighting. Light openings placed in the ceiling serve as good light distributors because the angle of light capture from high levels allows the room to get even light (Hareri & Alama, 2020). Light placed at this high point can be categorized into general lighting. In general, light can be grouped into three categories, namely general lighting, focused lighting and direct lighting (Hareri & Alama, 2020). General lighting is lighting that illuminates the place evenly, either through natural or artificial lighting. While focused lighting is lighting that highlights a specific area to clarify an object or activity. Direct lighting is used when you want to provide intense lighting in a certain area, either to increase visibility or simply to create ambience.

The application of general lighting can also be created through openings located in high places such as ceilings or roofs. Buildings that have roof openings generally feel bright inside without having to turn on the lights. Although it can provide optimal light, the use of openings in the ceiling of the building also needs to be considered carefully. The size of the opening field, the material used, and the orientation towards sunlight need to be carefully designed to avoid potential visual disturbances. One disturbance that often occurs is glare, which is when the light intensity is too high, disturbing the comfort of the eyes when looking at it. Therefore, the material is very influential to control the intensity of the light.

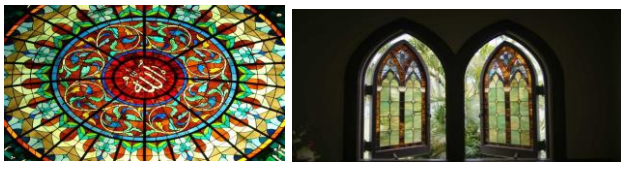

Figure 3 Stained-Glass Usage Examples
Source: https://www.kompasiana.com/kacapatri/5b0c26c55e137359217ed9e3/keindahan-kerajinan-kaca-patri?page=1&page_images=2
Accessed on November 21, 2024

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Materials such as stained glass can be applied to control the intensity of sunlight entering through light openings (see Figure 3). This material can change the initially blinding rays into softer rays of light that do not create glare. The use of stained glass can also add aesthetic value because this type of glass generally has a variety of colors that are formed into a particular object or just abstract. Under certain conditions this material can reflect colorful light into the room. This strengthens the argument about light which is also included in the decorative elements in buildings (Hadrovic, 2022). So, this stained-glass material is very commonly used in public places, including places of worship such as cathedrals and mosques. Cheng Ho Mosque Surabaya also uses stained glass material in its building and has a dual function.

Morphological Analysis of Pagoda Roof Architecture of Cheng Ho Mosque Surabaya

The pagoda roof at Cheng Ho Mosque Surabaya is part of the architectural elements that apply traditional Chinese aesthetics with Islamic architectural values. The main material of the roof is roof tile with green color which is one of the lucky colors for Chinese culture. The characteristic of the multilevel roof in Chinese culture is the arch at the ridge or the ends of the roof (Aini, et al., 2022).

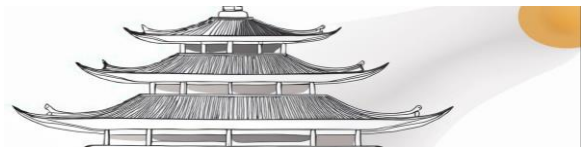

Figure 4 Illustration of Light Entering Through the Roof
Source: Author Documentation, 2024

The shape of the roof on a building will certainly have an impact on its interior aspects, one of which is the lighting system, especially natural lighting. The distribution of natural lighting is strongly influenced by the shape and type of roof. For example, a roof with light openings will allow more light to enter, while the slope of the roof and its orientation towards the sun will determine the optimal intensity and duration of natural lighting which will then affect energy efficiency and visual comfort in space (see Figure 4). The roof of Cheng Ho Mosque is analyzed using the architectural morphology method based on the theory of Nicola Marzot (2005), an Italian architect and academic known for his

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contributions to the fields of urban morphology and architectural morphology. He expanded the traditional morphological approach to be more contextual, emphasizing the relationship between spatial form, social function, and cultural dynamics. Nicola Marzot views architecture as a product of spatial evolution influenced by social, cultural and functional contexts. In his approach, architectural form is not only seen in terms of geometry, but also from the role and dynamics of the use of space over time.in Marzot's method of analyzing architectural morphology consists of 3 Dimensions of Analysis in Marzot's Morphology, namely, first Form.

The physical characteristics of the building/space: mass, roof, facade, layout, secondly Function, how the space is used, altered, or reinterpreted by its users, thirdly Meaning, the cultural, symbolic, and historical context attached to the form. The analysis will be presented in Table 1. The results obtained from Table 1 are as follows;

1. Form: The roof of the Cheng Ho Mosque pagoda is multilevel with an octagon plan, resulting in a total of 16 light openings. These openings consist of stained-glass window panels designed with Arabic calligraphy on the themeof Allah's attributes, doubling as lighting elements and religious symbols. The size of the openings at the top (gap 1) is larger than at the bottom (gap 2), creating a different distribution of natural light day and night, and displaying a distinctive visual character from both inside and outside the building.

2. Function: The multi-level pagoda roof design of the Cheng Ho Mosque creates gaps that serve as openings for natural lighting and air circulation. These openings are placed around the perimeter of the roof on several levels and allow sunlight to enter evenly into the central area of the mosque without the aid of lamps, especially during sunny weather. Stained glass window panels with Arabic calligraphy play a dual role: regulating the intensity of light to avoid glare and providing aesthetic value. Although natural lighting is very effective during the day, artificial lighting is still needed at night or in cloudy weather to maintain visual comfort. Overall, the lighting in this mosque is not only functional, but also part of the artistic design of the building.

3. Meaning: The pagoda roof of Cheng Ho Mosque Surabaya is a symbol of acculturation between Chinese and Islamic cultures. Culturally and spiritually, the multilevel shape pointing upwards reflects the relationship between man and God, as well as honoring the legacy of Admiral Cheng Ho as a Chinese Muslim figure. Socially, the roof strengthens the

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identity of the Chinese Muslim community and shows that Islamic architecture can adapt to local culture without losing its religious value.

CONCLUSION

The main findings of the research are based on three main aspects: form, function, and meaning of the pagoda roof of Cheng Ho Mosque Surabaya, namely, based on form; the pagoda roof is terraced with an octagon plan, has 16 light openings in the form of stained glass panels with Arabic calligraphy. Based on Function; The pagoda roof design creates a gap between levels, as an entry point for natural light and air circulation, spreading evenly to the central area of the mosque, the stained glass panel doubles to regulate the intensity of light so as not to dazzle and present visual beauty. This natural lighting effectively replaces lamps during the day, thereby reducing electrical energy consumption. Based on meaning; as a cultural and spiritual symbol, a vertical relationship between man and God, a tribute to Admiral Cheng Ho, Islamic architecture is able to adapt to local Chinese culture, and a symbol of acculturation and identity of the Chinese Muslim community in Indonesia.

Based on these findings, it can be concluded that the pagoda roof of Cheng Ho Mosque Surabaya not only functions as an aesthetic element resulting from the acculturation of Chinese and Islamic culture, but also has an important role in distributing natural lighting evenly into the mosque space. The light openings on the roof as well as the use of stained glass help to create visual comfort while strengthening the decorative and spiritual values, making this roof an architectural element that is balanced between function, aesthetics, and religious meaning.

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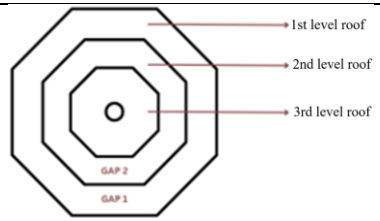
Table 1: Morphological Analysis of Pagoda Roof Architecture at Cheng Ho Mosque Surabaya

Source: Author Documentation, 2024

No.	Observed Object	Form	Function	Meaning
1	Source: Author Documentation, 2024	- The pagoda roof, which has a multilevel shape	A multi-storey roof provides a gap between the lower and upper parts of the roof (see object 1), which can help natural light enter the room with a more even distribution. The gap functions as an opening to regulate air circulation and optimize the entry of natural lighting.	The meaning of the object under study consists of; 1. Symbol of Cultural Acculturation. The pagoda roof is derived from traditional Chinese and Buddhist architecture, its application to the mosque shows the adaptation of Islamic values to Chinese culture. It is not only a place of worship, but also a symbol of unity across ethnicities and religions, especially for the Chinese Muslim community. 2. Philosophical and Spiritual Meanings. Pagodas in Chinese culture are often associated with spiritual attainment and closeness to the heavens, as they are terraced and point upwards. In the Islamic context, the vertical shape of the roof is interpreted as a spiritual direction towards God, a connection between earth and heaven. 3. Architecture honors the cultural heritage of Cheng Ho. Recognition of the role of Chinese Muslims in the history of Islam in Southeast Asia. Identity of the Chinese Muslim Community, the use of Chinese architectural elements in this mosque strengthens the Chinese community's sense of Islam. It becomes a form of visual inclusivity, conveying the message that Islam can coexist and thrive in any culture. 4. Aesthetic and Symbolic Meanings Visually, it gives a sense of peace, order, and beauty, values that also align with Islamic principles. The symbolism of colors and ornaments (such as red, gold, or green) also
2	 Object 2, Top View Illustration of the Octagon Pagoda Roof Source: Author Documentation, 2024	- Top View of the Pagoda Roof At the Cheng Ho Mosque, the shape of the octagon or octagon, the total number of openings on the roof is 16 (see Object 2). - The size of the light aperture field in gap 1 is larger than that in gap 2.	- The small openings placed in the gaps between the roofs act as entry points for natural light into the central area. - The openings are around the pagoda roof in both the first and second gaps. - Not only in the morning, but as long as the sun is shining brightly, the light will enter the building.	
3		- Window Panels are light openings that have a dual function (see object 3). - This opening uses stained glass material designed	- Window Panels are light openings that have a dual function (see object 3). - The use of stained glass can help in regulating the intensity of natural light from sunlight so that it is not too glaring, so that the light diffused is visually	

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	Object 3, Window Panels for Light Openings on the Roof of Cheng Ho Mosque Source: Author Documentation, 2024	with an Arabic calligraphy taken from some of the obligatory attributes of Allah, S.W.T.	comfortable. Not too bright and not too dim.	carries a sense of harmony between culture and spirituality. (Rigasari et al. (2024), Nas, P. J. M. (2003).
4	 Object 4, Pagoda Roof Inside view of the building (Daytime Lighting Condition) Source: https://www.youtube.com/watch?v=mJWZaJpPS1w Accessed on November 21, 2024	- An inside view of the roof of the Pagoda at Cheng Ho Mosque, during the day.	- light openings on the roof of the pagoda, serving to illuminate the center of the mosque evenly without the help of lamps as a source of artificial lighting (see object 4). - Optimal utilization of natural lighting when the weather is sunny. Through these openings, energy consumption from artificial lighting can be reduced.	
5	 Object 5, Pagoda Roof Inside view of the building (Lighting condition at night) Source: https://www.idntimes.com/travel/journal/asrul-pauzi-hasibuan/5-hal-menarik-tentang-masjid-cheng-hoo-surabaya-c1c2 Accessed on November 21, 2024	- An inside view of the roof of the Pagoda at Cheng Ho Mosque, at night. - exterior view of the roof of the Pagoda at Cheng Ho Mosque, at night.	- At night, lighting from lamps is used (see object 5). - Natural lighting from window openings and skylights is effective in creating a bright atmosphere during the day, but still requires artificial lighting to maintain comfort at night. - The application of artificial lighting can ensure the room stays bright. - The stained glass used in the Cheng Ho Surabaya Mosque plays an important role in creating aesthetic lighting and soft luminescence (see object 5).	

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REFERENCE

Adjie, A. M., & Joedawinata, A. (2023). SYMBOLIC CONTENT OF EXTERIOR AND I NTERIOR AL-A'ZHOM GRAND MOSQUE TANGERANG. Artic, 6(1), 571-579. https://doi.org/10.34010/artic.v6i1.10906

Ahmad, S., Kokab, J., & Ali, H. (2024). CHARACTER-BUILDING PILLARS IN SOCIETY: ROLE OF MOSQUE IN MUSLIM SOCIETY. Al-Kashaf: Research Journal for Social Sciences (Miscellaneous), 4(1), 57-63. https://alkashaf.pk/index.php/Journal/article/view/115

Aini, F. N., Saryoan, C. A. R., & Prakoso, D. D. (2022). ANALISIS ORNAMENTASI BANGUNAN PADA MASJID CHENG HOO SURABAYA DAN PURBALINGGA BERDASARKAN AKULTURASI BUDAYA ASING. Mozaik: Buletin Perancangan Arsitektur, 1(1), 1-8. https://jurnalsaintek.uinsa.ac.id/index.php/mozaik/article/view/1482

Aisyah, Pandjaitan, T. H., Ismoyo, A. D., et al. (2020). EFFICIENCY ON ARTIFICIAL LIGHTING ENERGY: DOME, PYRAMID AND FLAT SHAPED – CEILING MOSQUE. IOP Conference Series: Earth and Environmental Science. https://doi.org/10.1088/1755-1315/452/1/012111

Al-Raddadi, T. (1999). DESIGN STANDARDS FOR NATURAL LIGHTING IN MOSQUES. RESEARCH SEMINAR ON MOSQUE ARCHITECTURE. King Saud University, Riyadh.

Arel, H. S., & Oner, M. (2017). USE OF DAYLIGHT IN MOSQUES: MEANING AND PRACTICE IN THREE DIFFERENT CASES. International Journal of Heritage Architecture, 1(3), 421-429. http://dx.doi.org/10.2495/HA-V1-N3-421-429/015

Azzahrah, S. F., Salih, S. A., Sabil, A., et al. (2023). MORPHOLOGY AND TYPOLOGY OF ISLAMIC DOME ARCHITECTURAL DESIGN IN THE MIDDLE EAST AND CENTRAL ASIA: PERSIAN ISLAMIC DOME. International Journal of Academic Research in Business & Sosial Sciences, 13(9), 761-776. http://dx.doi.org/10.6007/IJARBSS/v13-i9/18436

Cetinkaya, M., & Efeoglu, N. (2024). MOSQUE AND SOCIETY: CAMBRIDGE CENTRAL MOSQUE "A BRITISH MOSQUE FOR THE 21ST CENTURY". Journal of Social Sciences, 23(3). 781-793. https://doi.org/10.21547/jss.1385973

Hadrovic, A. (2022). LIGHT IN MOSQUE DESIGN. International Journal of Multidisciplinary Research and Publication, 5(4), 136-146.

Hareri, R., & Alama, A. (2020). LIGHTING DESIGN IN TWO MOSQUE TYPOLOGIES IN THE CITY OF JEDDAH, SAUDI ARABIA. Conference: 3rd International Conference on Islamic Heritage Architecture and Art. http://dx.doi.org/10.2495/IHA200111

Hendri, Z. (2022). UNITY IN DIVERSITY: HARMONY IN THE DECORATION OF THE MUHAMMAD CHENG HOO PURBALINGGA MOSQUE BUILDINGS, CENTRAL JAVA, INDONESIA. IJMCER: International Journal of Multidisciplinary and Current Education Research, 4(3), 79-82.

Copyright (c) 2024 Tiara Rijayanti Fitriana, Tiara Isfiaty

Husin & Anisa, N. (2021). NILAI-NILAI PENDIDIKAN ISLAM DARI ORNAMEN ARSITEKTUR MASJID ASSU'ADA WARINGIN. Al-Qalam: Jurnal Ilmiah Keagamaan dan Kemasyarakatan, 15(1), 51-71. http://dx.doi.org/10.35931/aq.v15i1.541

Islami, A. (2023). THE EDUCATIONAL ROLE OF THE MOSQUE IN SOCIETY. Addaiyan Journal of Arts, Humanities and Social Sciences, 5(11), 1-7. https://doi.org/ajahss.5.11.1

Kusumawardani, L., Ramadhan, T., & Maknun, J. (2022). IMPACT OF ARTIFICIAL LIGHTING FOR VISUAL COMFORT TOWARDS USER ACTIVITY AT AL-FURQON MOSQUE. IOP Conference Series: Earth and Environmental Science. https://doi.org/10.1088/1755-1315/1058/1/012015

Lopes, R. O., & Hasnan, N. M. (2022). THE EXPRESSION OF CULTURAL IDENTITY IN MOSQUE ARCHITECTURE IN BRUNEI DARUSSALAM. Trans: Trans-Regional and National Studies of Southeast Asia, 10(1), 39-58. https://doi.org/10.1017/trn.2021.13

Malik, I., Malek, R., & Adas, Y. A. (2024). THE INFLUENCE OF HINDU-BUDDHIST, CHINESE, AND EUROPEAN CULTURE IN EXTERIOR ARCHITECTURAL CHARACTERISTICS OF MOSQUE ON JAVA ISLAND INDONESIA. Journal of Architecture and Planning, 36(2), 229-252. https://doi.org/10.33948/JAP-KSU-36-2-3

Marzot, N. (2005). The study of urban form in Italy. Urban Morphology, 9(2), 73–86.

Nas, P. J. M. (2003). Indonesian houses: Tradition and transformation in vernacular architecture (Vol. 1) [PDF]. Leiden: KITLV Press / Singapore: NUS Press. Retrieved from https://www.researchgate.net/publication/41017371_The_house_in_Indonesia_Between_globalization_and_localization

Nirmala, A. P. H., Violaningtyas O. A., & Damayanti, R. A. (2019). ORNAMEN ISLAM PADA BANGUNAN ARSITEKTUR MASJID DIAN AL MAHRI KUBAH EMAS DEPOK. Dimensi, 16(1), 29-42. https://doi.org/10.25105/dim.v16i1.6159

Pusat Data & Analisa Tempo. (2020). MENYUSURI JEJAK KAISAR CHENG HO DAN KLENTENG SAM POO KONG SAMPAI SEMARANG. Jakarta: Tempo Publishing.

Radwan, A. H. (2021). THE MOSQUE AS A PUBLIC SPACE IN THE ISLAMIC CITY: AN ANALYTICAL STUDY OF ARCHITECTURAL & URBAN DESIGN OF CONTEMPORARY EXAMPLES, 6(30), 70-90. https://doi.org/10.21608/mjaf.2020.35199.1712

Rigasari, A. R., Proborini, C. A., & Cahyono, A. (2024). Akulturasi Budaya Islam dan Tionghoa dalam Pendirian Masjid Cheng Ho. Tambuleng: Jurnal Pendidikan Seni Drama, Tari, dan Musik, 4(2), 1–11. https://doi.org/10.37304/jt.v4i2.9573.

Rochym, A. (1995). MESJID DALAM KARYA ARSITEKTUR NASIONAL INDONESIA. Bandung: Penerbit Angkasa.

Sadono, S., & Purnomo, A. D. (2020). AKULTURASI BUDAYA ISLAM DAN TIONGHOA DALAM ARSITEKTUR MASJID AL IMTIZAJ CIKAPUNDUNG BANDUNG. Gorga: Jurnal Seni Rupa, 9(2), 438-443. https://doi.org/10.34820/FK2/TPX4HF

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Wirz-Justice, A., Skene, D. J., & Munch, M. (2021). THE RELEVANCE OF DAYLIGHT FOR HUMANS. Biochemical Pharmacology, 191, 1-4. https://doi.org/10.1016/j.bcp.2020.114304

Wisnu, & Indarwanto, M. (2017). EVALUASI SISTEM PENCAHAYAAN ALAMI DAN BUATAN PADA RUANG KERJA KANTOR KELURAHAN PANINGGILAN UTARA, CILEDUG, TANGERANG. Vitruvian: Jurnal Arsitektur, Bangunan, & Lingkungan, 7(1), 41-46. https://dx.doi.org/10.22441/vitruvian

Wiyanto, A. F. E. (2021). ANALISIS PENCAHAYAAN ALAMI DAN BUATAN PADA RUANG KANTOR TERHADAP KENYAMANAN VISUAL PENGGUNA. Jurnal Patra, 3(1), 33-42. https://doi.org/10.35886/patra.v3i1.182

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